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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/822,700

04/13/2004

Naoto Matsunami

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2922

24956

7590

06/06/2006

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.
1800 DIAGONAL ROAD
SUITE 370
ALEXANDRIA, VA 22314

EXAMINER

MASDON, DAVID T

ART UNIT

PAPER NUMBER

2188

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/822,700		MATSUNAMI ET AL.	
	Examiner		Art Unit	
	David Masdon		2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) .
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements (IDS) were submitted on 4/13/2004, 9/22/2004, 8/16/2005, 9/20/2005 & 4/19/2006. The submissions are in compliance with the provisions of 37 CFR 1.97 and 1.98, except as noted below. Accordingly, the information disclosure statements are being considered by the examiner, except as noted below.

Publication numbers 2003/110237A1 & 2004/010654A1 submitted on April 19, 2006, are not being considered. They are invalid publication numbers.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Storage system with heterogeneous storage, creating and copying file systems, with write access attribute.

Drawings

3. The drawings filed on 4-13-2004 have been approved by the examiner.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 6, 12, 17-18 rejected under 35 U.S.C. 102(b) as being anticipated by Fitzgerald, V et al (US 5,787,485).

With respect to claim 1, Fitzgerald, V et al discloses a first storage system connected to a computer and a second storage system, comprising:

a first storage; (Fig. 1, element 10)

a first controller for controlling said first storage system; and (Fig. 1, element 30)

a second controller for controlling input/output operations to/from said second storage system, said second storage system having a controller and a second storage connected said controller, (Fig. 1, elements 20 & 40)

wherein said first controller creates a file system in said second storage. [(first controller sends data to be written to second storage) column 2, lines 29-37]

With respect to claim 3, Fitzgerald, V et al discloses a first storage system according to claim 1, wherein:

said first controller is responsive to an access request for a file received from said computer for identifying that a file system in which said file stored has been created in said second storage, and accesses a file stored in said second storage through said second controller. [(first controller configured to receive write requests) column 2, lines 29-37]

With respect to claim 6, Fitzgerald, V et al discloses a first storage system according claim 1, wherein:

said first controller creates file system in said first storage, and copies data in the file system created said first storage into said second storage while maintaining the structure of said file system. [(performing mirror set copy from first storage device to second storage device) column 1, lines 30-31]

Claim 12 rejected with same rationale as claims 1 & 3.

Claim 17 rejected with same rationale as claim 1.

Claim 18 rejected with same rationale as claim 6.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 4-5, 13 rejected under 35 U.S.C 103 (a) as being unpatentable over Fitzgerald, V et al (US 5,787,485) as applied to claims 1 and 12 above, and in view of van Cruyningen (US 6,338,110).

As per claim 2, Fitzgerald, V does not disclose expressly first storage system according to claim 1, wherein: said second controller manages logical units created in said second storage as a RAID group possessed by said first storage system, and said first controller creates a file system said second storage using said RAID group. However, van Cruyningen discloses a controller utilizing the RAID system. (column 5, lines 11-12)

Fitzgerald, V and van Cruyningen are analogous art because they are from same field of endeavor, namely plurality drive storage systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the RAID of van Cruyningen into the system of Fitzgerald, V. The motivation for doing so would have been to increase the versatility of the system of van Cruyningen.

As per claim 4, van Cruyningen discloses multiple drives. (Fig. 10, element 16)

As per claim 5, van Cruyningen discloses multiple storage devices making up a single storage array. (column 4, lines 36-38)

Claim 13 rejected with same rationale as claim 5.

8. Claims 8-9, 20 rejected under 35 U.S.C 103 (a) as being unpatentable over Fitzgerald, V et al (US 5,787,485) as applied to claims 6 and 18 above, and in view of Yamamoto et al (US 2003/0236884).

As per claim 8, Fitzgerald, V et al does not disclose expressly a first storage system according to claim 6, wherein: said first controller or said second controller adds an attribute indicative of prohibition of a write access from said computer to the file system when the data in the system created in said first storage copied into said second storage. However, Yamamoto et al discloses zoning information can prohibit a storage subsystem from being accessed. (page 6, section 0099)

Fitzgerald, V et al and Yamamoto et al are analogous art because they are from same field of endeavor, namely storage systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the zoning information of Yamamoto et al into the system of Fitzgerald, V et al. The motivation for doing so would have been the increase security of a file system and increase the versatility of the management server.

As per claim 9, Yamamoto et al et al discloses a first storage system according claim 8, wherein: said first storage system is connected to a management device, such that said first controller creates file system, copies the data the file system created in said first storage into said second storage, and adds the attribute based on an instruction from said management device. [(before creating a file system, configuration information is required) page 6, section 0098]

Claim 20 rejected with same rationale as claim 8.

9. Claims 7, 14 and 19 rejected under 35 U.S.C 103 (a) as being unpatentable over Fitzgerald, V et al (US 5,787,485) as applied to claims 6, 12, and 18, and in further view of Strange et al (2003/0084242).

As per claim 7, Fitzgerald, V et al does not disclose expressly that said first controller copies the data in the file system created in said first storage into said second storage, and thereafter erases the data the file system created in said first storage. However, Strange et al discloses creating new file system, and deleting the old one.
(page 5, section 0061)

Fitzgerald, V et al and Strange et al are analogous art because they are from the same field of endeavor, namely copying file systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the erasing of Strange et al into the system of Fitzgerald, V et al. The motivation for doing so would have been to increase available storage.

Claim 14 rejected with same rationale as claims 3 & 7.

Claim 19 rejected with same rationale as claim 7.

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10. Claims 10-11, 15 and 16 rejected under 35 U.S.C 103 (a) as being unpatentable over Fitzgerald, V et al (US 5,787,485) and Yamamoto et al (US 2003/0236884), and Strange et al (2003/0084242).

As per claim 10, Strange et al discloses a first storage system according to claim 9, wherein:

said management device sets a time at which new file system is created in said first storage; [(created at a later time) page 5, section 0067]

said first controller creates a new file system in said first storage upon arrival of said time; and [(resync snapshot is created) page 5, section 0061]

said first controller stores data written from said computer in said new file system, and moves a file system created in said first storage which has stored data written from said computer before said time into said second storage. [(resync is copy of root) page 5, section 0062]

Fitzgerald, V et al, Yamamoto et al and Strange et al are analogous art because they are from the same field of endeavor, namely copying file systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the copying and moving of a file system of Strange et al into the system of Fitzgerald, V et al. The motivation for doing so would have been to increase the versatility of the system of Fitzgerald, V and Yamamoto et al.

As per claim 11, Strange et al discloses a first storage system according to claim 10, further comprising a management table,

wherein said storage system manages the structure of a file system using said management table. [(table used between file system and device manager) page 3, section 0044]

Claims 15 rejected with same rationale as claim 8.

Claim 16 rejected with same rationale as claim 10.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Henderson et al	5,719,983
Midgley et al	2005/0193031
Taylor et al	6,654,830
Kern et al	7,043,665

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Masdon whose telephone number is (571)272-6815. The examiner can normally be reached on Monday - Friday, 7am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571)272-4210. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DM
Friday, May 19, 2006

Mano Padmanabhan
5/24/06

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER